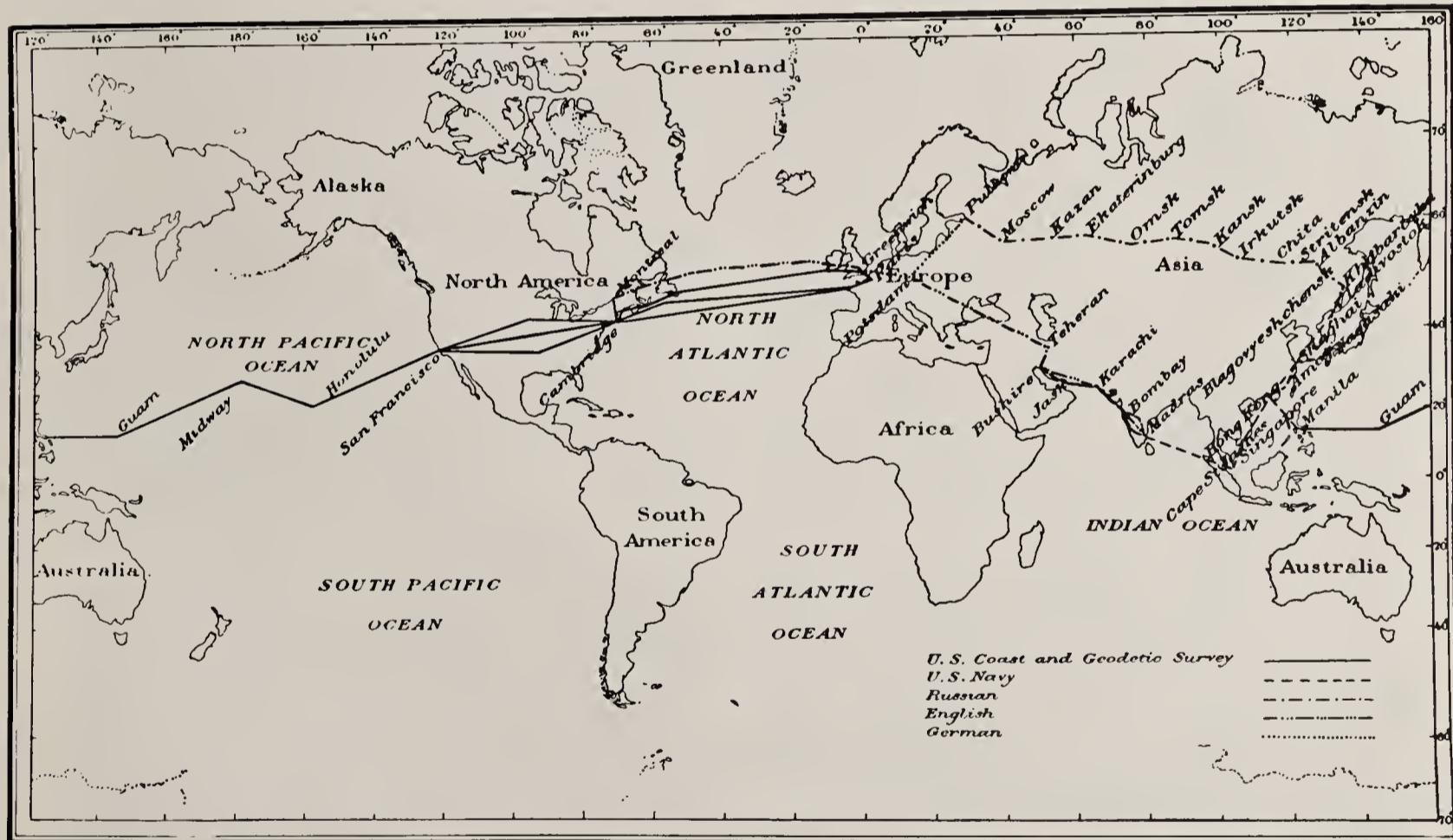


Mapline

*A quarterly newsletter published by
The Hermon Dunlap Smith Center for the History of Cartography
at The Newberry Library*

Number 52 December 1988

Electrical Longitude



Until the 1840s, there were several ways in which the difference in longitude between two places could be found, all more or less unsatisfactory. Astronomical techniques required very accurate instruments, highly skilled observers, and much calculation, and

were at best only approximate. A more common method involved the transportation of timepieces. If one set a clock to local sun time in one location, carried it to another location and compared its reading with the local sun time there, the difference in

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The Hermon Dunlap Smith Center for the History of Cartography was founded in 1972 at The Newberry Library to promote the study of the history of cartography through research projects, fellowships, courses of instruction, and publications. Further information about the Center is available on request from the Director, **David Buisseret**

longitude could be calculated. A very accurate clock was essential. An error of even one minute of time during the course of a journey would produce an error of $15'$ of longitude, equal to about seventeen miles [27.4 km] at the equator. Several geodesists, including Cassini, used signal fires or explosions of powder to transmit time signals, and the heliograph was also employed in this way, but the requirement for line-of-sight observation was a serious impediment with these methods.

By the 1840s a technological breakthrough made it possible for only two workers to compare the time at stations hundreds of miles apart, and highly accurate determinations could be made in the course of a few hours work. Working electromagnetic tele-

graphs had been constructed in England, Germany, Russia, and America by 1837 and several early experimenters saw the power of linking the telegraph with astronomical observation and the sending of time signals. In 1838, at the invitation of the celebrated French astronomer François Arago, Samuel F. B. Morse conducted a triumphant demonstration of his telegraph before the French Academy, and Arago is said to have suggested to him its potential for longitude determination.

In May of 1844 Morse's first experimental line went into service between the capitol building in Washington and a railroad warehouse in Baltimore, forty-five miles [72.4 km] distant. After an exciting few days transmitting reports from the Whig



and Democratic conventions, both of which took place in Baltimore, the telegraph settled down to more mundane business, carrying personal messages, requests to verify bank balances, and moves of chess games. Within a few weeks, Arago's idea was tested by the U.S. Naval Captain Charles Wilkes, recently returned from his round-the-world expedition. Wilkes brought chronometers to the two telegraph stations and compared them. His assistant, Lt. Eld, pressed his key to close the circuit exactly at a given minute, and Wilkes at the other end, hearing the click of the electromagnet, noted the time by his clock. This observation, by the "eye and ear method," was the first use of the telegraph to specifically determine longitude.

By 1846, Alexander Dallas Bache, the brilliant director of the U. S. Coast and Geodetic Survey, had determined to utilize this latest electrical technology to benefit the practical work of the survey. With the assistance of Sears C. Walker, an astronomer and statistician who would later run the Survey's telegraphic longitude program, Bache arranged to connect that institution with the High School Observatory in Philadelphia using the new telegraph line erected that year. The novelty in the Coast Survey's use of the telegraph lay in coupling it with astronomical observations. They did not transmit time *per se*, but the positions of stars, the raw material, as it were, for determining time. Bache reported that "the communication between Philadelphia and Washington was effected on the 10th of October, and results for difference of longitude obtained. Sig-

nals for time by the clock were transmitted, and the instant of transit of a star over the wires of the transit instrument was telegraphed." In November 1848, Bache maintained that the difference of longitude by telegraph "may be considered to have passed into one of the regular methods of geodesy." George B. Airy, the British Astronomer Royal, christened it "the American method" and made plans to employ the technique in Great Britain. It was used in Chile in 1849–1852 and to connect Santiago, Chile and Cordoba, Argentina in 1875. Airy achieved connections with Brussels and Paris in 1853 and 1854.

The widespread use of the American method made possible ever more accurate descriptions of the figure of the earth. Longitude observations are especially trustworthy when it is possible to complete a circuit with them, in which, like a snake biting its tail, the last leg of the circuit terminates at the point of origin. It is then possible to adjust each leg (or "arc") of the circuit so that it closes exactly. By 1880 a long, narrow belt of telegraphic observations from Paris to New Orleans had been adjusted in this way. Finally, with the completion of the Pacific cable in 1903, the Coast Survey immediately set about to determine the difference in longitude between San Francisco and Manila. Manila was at the eastern end of two telegraphic longitude arcs, one from Potsdam to Hong Kong via Tehran, Madras and Singapore, and the other across central Russia, via Moscow, Omsk, Irkutsk, and Vladivostok. With a few modifications, the operation was carried out in much the same manner as earlier Coast Survey determinations. Thus, by 1904, the "American method" had circled the globe, with Coast Survey operations accounting for 239° of longitude or two-thirds of the circumference of the earth.

The telegraphic method continued in wide use until well into this century and a special publication of the Coast Survey in 1913 was devoted to an explication of current practices. But in that same year, radio time signals were successfully transmitted from Virginia to the Eiffel Tower, and a new age had dawned for geodesy.

Robert W. Karrow, Jr.
Curator of Maps
The Newberry Library

Interior of a telegraphic longitude station, Hawaii, 1903. In its major features, it differs little from the set-up used in the 1850s. Stars are observed through the transit and the exact time of a star's passage over the zenith is sent over telegraph wires by the key at the base of the transit. The telegraphic signal causes a mark to be made on the rotating drum of the chronograph on the shelf to the right and, simultaneously, on an identical chronograph at the distant station. Electrical clocks at each station are meanwhile recording the local time on their respective chronographs. After an exchange of signals over several nights, the paper records from the chronographs are compared to determine the exact difference in time (and hence, in longitude) between the two stations.

Smith Center Announcements

Smith Center Fellows

The Smith Center offers long-term and short-term fellowships each year to enable scholars to spend time in residence at the Newberry using the library's historic map collection and supporting research collection. Short-term fellowships may last from two weeks to five months and carry a monthly stipend of \$750. A limited number of long-term awards are available for six to twelve months with a maximum stipend of \$25,000. Application deadlines for short-term fellowships are 1 March and 15 October. The annual deadline for long-term fellowships is 1 March. For additional information and application materials, write to James Akerman, Assistant Director, Hermon Dunlap Smith Center for the History of Cartography, The Newberry Library, 60 W. Walton Street, Chicago, IL 60610.

New Publications

Speculum Orbis Press and the Smith Center are happy to announce the forthcoming publication of an English edition of Leo Bagrow's *A. Ortelii catalogus cartographorum*, originally published in German between 1928 and 1930. Retitled *Mapmakers of the Sixteenth Century and their Maps: The Catalog of Cartographers of Abraham Ortelius, 1570*, the text has been thoroughly revised and edited by Robert W. Karrow, Jr., who is the Newberry Library's Curator of Maps. This monumental work of cartographic biography and bibliography was based on the list of map authors Abraham Ortelius provided with the first edition of his atlas, *Theatrum Orbis Terrarum*, published in Antwerp in 1570. In all, Ortelius listed 84 cartographers. Bagrow assembled the biographies of each of these men, and listed the maps each of them was known to have produced. English-speaking readers have long hoped for a translation of this standard work on sixteenth-century cartography, but Mr. Karrow's edition is much more than this. In the light of new information gathered since 1930, Karrow has painstakingly reworked, and in some cases rewritten the

original biographies. He has provided standard bibliographical descriptions of approximately 2000 maps, and has added 1000 entries to Bagrow's original bibliography of 700 related books and articles. The new edition also adds photographs of many rare printed and manuscript maps, some of which have never before been reproduced. We at the Smith Center look forward to this landmark publication, which is due in 1989. Advance orders should be addressed to Speculum Orbis Press, 730 N. Franklin Street, Chicago, IL 60610, telephone 312/266-1171.

Newberry Acquisitions

When they come the library's way, either as gifts or purchases, early atlases are among the most treasured of cartographic acquisitions. Each is not only a treasury of many important and valuable maps, but also is a unique record of the biases and curiosity of their publishers and former owners. This is certainly true of one recent addition to the Newberry's map collection, *Les cartes générales de toutes les provinces de France* a rare sixteenth-century atlas published by Christophe Tassin. Our copy bears a 1637 title page (that found on the second "edition" of the atlas), but it seems to have been assembled no earlier than 1646, the latest date on any of its maps. Tassin's atlas is the fourth in the line of large-format national atlases published in France which began in 1594 with the *Théâtre François* by Maurice Bouguereau, and was developed further by Jean Leclerc and Tassin's contemporary Melchior Tavernier. Though Tassin published many popular smaller atlases of France and adjacent countries, this large atlas seems never to have been very successful commercially, and this perhaps explains why it has largely been ignored by the scholars studying the mapping of sixteenth-century France. We believe nevertheless that it shows Tassin to have been a resourceful and careful cartographer, and further that its maps are representative of the consolidation of modern France and the expansion of French power in Europe.

Despite its title, *Les cartes générales* is really a world atlas. Besides 32 maps of the provinces of

France, there are maps of the four continents (Africa, America, Asia, and Europe) and maps as well of Spain, Germany, Northern Italy, and the Low Countries, and of many territories straddling the French frontier. Tassin's provincial maps are actually smaller in number than are found in many earlier atlases of France. For example, a 1634 edition Tavernier's atlas sports 52 different maps of provinces. Tassin's set of local maps of France is, however, more systematic and geographically complete than any previous set. The maps are on more nearly equal scales and redress gaps in coverage (notably in southern France) present in all previous atlases. The leaner set of French provincial maps made room for expanded coverage of frontier and adjacent regions, including the theatres of recent military campaigns and the loci of national territorial ambitions. Its international coverage could not yet compete with the massive world at-

lases produced by Tassin's contemporaries in the Netherlands, but one is inclined to see in the international aspect of this 'national' atlas a reflection of the growth of France as a continental power in the era just before the ascent of the "Sun King" Louis XIV to the throne.

A careful look at the maps in the atlas testifies that Tassin himself was a diligent cartographer. Very little is known of his life, but he seems to have had access to the best available manuscript maps and surveys produced for the French crown for sundry administrative and military purposes. Rather than printing uncritically his source maps precisely as he found them, as his predecessors Bouguereau, Leclerc, and Tavernier usually did, Tassin seems to have made careful improvements where necessary. Since Tassin's atlas is therefore the most completely original of the early national atlases of France, it is a shame it has languished in relative obscurity.



"Carte de Provence," from *Les cartes générales de toutes les provinces de France*

Briefly Noted

Publications and Catalogs Available

Cartomania, the newsletter of The Association of Map Memorabilia Collectors has seen nine issues published through Spring 1988. This modestly published quarterly includes news and short articles that will interest collectors and enthusiasts of common and ephemeral maps of all types including "postcards, greeting cards, envelopes & cachets, stamps & souvenir sheets, pictorial postmarks, postal stationery, publicity labels (you name it!)" Annual subscriptions/memberships are \$10 in the US and Canada, \$13 elsewhere. Write Siegfried Feller, 8 Amherst Road, Pelham, MA 01002, telephone 413/253-3115.

The International Cartographic Association (ICA) has recently published a history of itself, **International Cartographic Association 1959-84: The First Twenty-five Years**, compiled by Ferdinand J. Ormeling, Sr. The publication is available from Elsevier Applied Science Publishers, Molenwerf 1, Postbus 211, NL-1000 AE Amsterdam, Netherlands.

The **1988 Directory of the Mapping Sciences**, which describes the services and products of more than 170 private mapmaking companies, is available from the American Society for Photogrammetry and Remote Sensing, 210 Little Falls St., Falls Church, VA 22046. The price is \$25 for non-members and \$15 for members. Phone 703/534-6617.

New York Map Society Tenth Anniversary

Mapline sends its congratulations to the New York Map Society on the completion of its first decade of programs. The society, which usually convenes at the American Museum of Natural History, first met in January 1978. Since then it has regularly sponsored monthly lectures and field trips concerned with cartography, the history of cartography, and map libraries. For information about membership and programs, write The New York Map Society, c/o The Map Division, New York Public Library, 42nd Street and Fifth Avenue, New York, NY 10018.

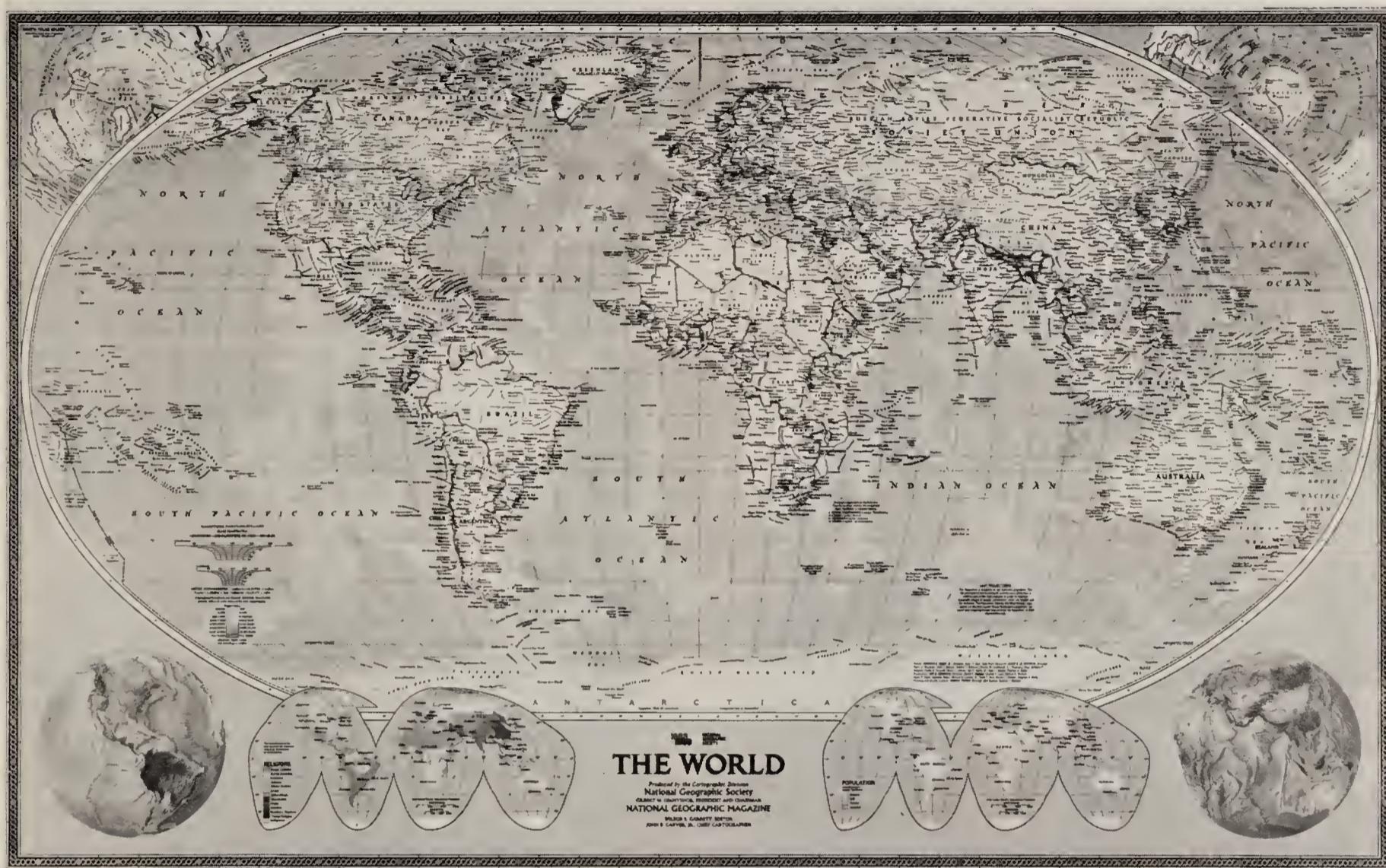
New world map on the Robinson projection. Photo courtesy of the National Geographic Society

Fellowships and Awards

National Geographic adopts Robinson projection. Many readers of *Mapline* already know that the National Geographic Society has recently changed the projection for its standard world map, from the Van der Grinten projection, which it has used since 1922, to the Robinson projection, designed by University of Wisconsin Professor Emeritus of Geography Arthur H. Robinson. The switch, announced 13 October 1988, received much welcome attention in the national press, including network news broadcasts and *USA Today*. In honor of his projection and of his life's work in cartography, Dr. Robinson received from the Society the prestigious John Oliver La Gorce Medal. The medal is reserved for "accomplishment in geographic exploration, or in the sciences, or for public service to advance international understanding." Previous recipients of this medal include Jacques Cousteau, Prince Philip, Amelia Earhart, and Admiral Byrd.

Grant for Map Preservation in New York State. Pre-1940 transportation and city street maps in seven libraries in New York State will benefit from a \$130,000 grant for map conservation provided by the state's Education Department and the National Endowment for the Humanities. Over 2000 maps housed at Cornell University, SUNY Albany, SUNY Stony Brook, Syracuse University, the University of Rochester, the New York Public Library, and the New York State Library will be preserved. For information about program, write David Allen, Map Librarian, Main Library, SUNY Stony Brook, Stony Brook, NY 11794-3331.

The John Carter Brown Library is now accepting applications for both short-term (2-4 months) and long-term (6 or 12 months) research fellowships in fields appropriate to the library's collections, in-



cluding the history of cartography. These fellowships, for the year 1 June 1989-30 May 1990, are open to Americans and foreign nationals engaged in pre- or post-doctoral, or independent research. Travel grants to aid researchers desiring to use the library for periods up to two months are also available. For applications write the Director, John Carter Brown Library, Box 1894, Providence, RI 02912. Applications for the fellowships must be postmarked by 15 January 1989. The awards will be announced before 15 March 1989. Travel grants are awarded throughout the year, provided applications are made four months ahead of time.

Conferences and Exhibitions

Geography and Map Division of the Special Libraries Association. At the 1989 conference in New York, 10-15 June, the Geography and Map Division will focus on user services and new directions for map libraries. A special feature designed for those unable to attend the entire conference is a one-day group of presentations on Tuesday, 13 June. The field trip on Thursday 15 June will be to the Yale University map collection and to the Lamont-Doherty Geological Observatory at Palisades, N.Y. Further details from Muriel Strickland, program planner, University Library, San Diego State University, San Diego, CA 92182-0511, telephone 619/594-5650.

Recent Publications

Quincentennial Conference at the John Carter Brown Library. The John Carter Brown Library plans an international conference in September 1991 addressing the theme "America in European Consciousness: The Impact of the New World on the Old, 1492-1750." The conference will focus on what learned elites thought and imagined about America as well as on the way in which these thoughts and images may have influenced attitudes and policies within Europe itself. For inquiries, write Quincentennial Conference, John Carter Brown Library, P.O. Box 1894, Providence, RI 02912.

Conference on Exploration and Discovery to Commemorate the Arrival of Captain George Vancouver on the Pacific Coast of North America in 1792. The Department of history at Simon Fraser University has issued a call for papers for a conference on 17-19 April 1992 marking the two hundredth anniversary of the voyage bringing George Vancouver to the Pacific coast of North America. Proposals for papers presenting new research on social, cultural, economic, scientific, technological, and literary aspects of exploration and discovery should be submitted before 15 September 1989. Send summaries of 100-200 words and brief vitae to The Director, Vancouver Conference, Department of History, Simon Fraser University, Burnaby, British Columbia, Canada, V5A 1S6.

Yale Center for British Art. An exhibit organized by Elisabeth R. Fairman will examine "The Mapmaker's Art, 300 Years of British Cartography." The exhibit, showing materials drawn primarily from the Center's collections, may be viewed from 17 January to 12 March 1989.

British Library, Map Gallery. Beginning 1 March 1989, an exhibition, "What Is a Map," will consider the variety of purposes for which maps have been created, and will focus on the role of map users in stimulating cartographic innovation and development throughout history. The exhibition will feature maps made for prospectors, soldiers, statesmen, travellers, statisticians, businessmen, and sports enthusiasts drawn from the vast collections of the library.

Exploration and Mapping of the American West: Selected Essays/edited by Donna P. Koepp. Map and Geography Round Table of the American Library Association Occasional Paper No. 1. Chicago: Speculum Orbis Press, 1986. 182 p., 28 plates. ISBN 0-932757-01-4 (Order from Speculum Orbis Press, 730-740 N. Franklin St., Chicago, IL 60010)

A Guide to Historical Map Resources for Greater New York/Jeffrey A. Kroessler. Map and Geography Round Table of the American Library Association Occasional Paper No. 2. Chicago: Speculum Orbis Press, 1988. 56 p., 7 plates. ISBN 0-932757-02-2 (Order from Speculum Orbis Press, 730-740 N. Franklin St., Chicago, IL 60010)

Mapline welcomes the inauguration of a new series of occasional publications by the Map and Geography Round Table (MAGERT) of the American Library Association. The first two numbers in the series both relate to the history of cartography. The first publication, *Exploration and Mapping of the American West*, is a collection of eight articles focussing primarily on nineteenth-century surveying and mapping efforts. Except for the first and the last, each article concerns the work of particular individuals, or of particular surveying projects and goals. The bookends for the collection are a personal selection of important maps of the West from the 1540s to the 1840s by Kenneth Nebenzahl, and John B. Garver, Jr.'s thoughts on mapping the Western past for *National Geographic*. The articles are authoritative, but are written mostly in a lively style, so the collection will please scholars and casual readers alike.

The second number, *A Guide to Historical Map Resources for Greater New York*, will prove useful in the extreme for urban and social historians and social scientists, and map readers of other stripes looking for specific kinds of maps of the New York metropolitan area. The holdings and services

of 49 public and private libraries, archives, agencies, and historical associations are briefly described. Many of these are familiar institutions of first resort, such as the New York Public Library and the Library of Congress. But the guide is immeasurably enriched by its descriptions of smaller and more obscure collections lodged in such unexpected places as the Brooklyn Union Gas Company, the Archdiocese of New York, and the South Street Seaport Museum. A useful table summarizes the holdings of each institution by type, geographical area, and inclusive dates.

Maps for Local History/Brian Paul Hindle. North Pomfret, Vermont: David and Charles, 1988. 160 p., many plates. ISBN 0-7134-5584-5 (Order from David and Charles, Inc., North Pomfret, Vermont 05053, \$34.95.)

This handsomely-produced volume is one of the "Batsford Local History Series," but its contents bear on much more than local history. There are six chapters, covering six map-types: early maps, county maps, estate maps, town plans, transport maps and Ordnance Survey maps. Each chapter has a wealth of well-chosen illustrations, in some cases including comparative details photographed with great skill. The only criticism which might be made is that the examples are not analyzed in sufficient depth. In order to make the point about the usefulness of maps to historians, it probably would have been better to take three or four examples in each chapter, and then examine each very carefully, if necessary with the aid of explanatory maps. But this is a novel and very useful book, with a splendid bibliography.

The Map of London from 1746 to the Present Day/Andrew Davies. North Pomfret, Vermont, David and Charles, 1987. 106 p., 46 plates. ISBN 0 7134 5404 0 (Order from David and Charles, Inc., North Pomfret, Vermont 05053, \$34.95.)

Andrew Davies, who has written a good deal about London, had the genial idea of producing a book in which the 23 sections of John Rocque's

1746 map of London would be reproduced side by side with maps of the same area at the present day. The result is often very striking, as open heaths give way to a dense network of streets, and Westminster Bridge is joined by many others. It seems a pity, though, that Davies chose the maps of Geographers' A-Z Map Company to accompany Rocque. The A-Z maps are excellent for finding your way about, with their bold type and greatly exaggerated street-widths. But what are qualities for the wandering tourist are disadvantages for the sedentary scholar, who would like to be able to make close comparisons between what was and what is; a less stylized map-type would have served this purpose much better. It has to be added, though, that Davies' commentary is so good and pertinent as almost to overcome the handicap of the maps.



Detail from John Rocque's *Plan of the cities of London and Westminster, and borough of Southwark* (London, 1746)

Cartographie et Politique dans la Belgique du XIX siècle/Marcel Watelet. Brussels: Crédit Communal, 1987. 270 p., many plates. (Order from Crédit Communal, Boulevard Pachéco 44, Brussels, Belgium.)

The Crédit Communal, a Belgian bank, had already endeared itself to cartographers by its publication of the magnificent *Albums de Crôy*, a set of plans and views of estates about 1600. Now it has ensured the publication of another major cartographic series, in the shape of these maps from the collection founded by the first Belgian Minister of Public Works, Jean-Baptiste Nothomb. This minister was very active in the promotion of railways in the new Belgian state, and Marcel Watelet uses maps and other documents to bring out his role in making Belgium a major European rail center. There are excellent reproductions not only of the maps which Nothomb used, but also of many others (including space images) which can throw light on the theme. This is a book which is of great interest to map enthusiasts, and indispensable to anybody concerned with the emergence of the modern Belgian state. Where is our equivalent of the Crédit Communal in the United States?

Guide to Map Collections in Singapore/Nicholas Martland. Singapore: National Library. 42 p. (Order from the National Library of Singapore, Stamford Road, Singapore 0617.)

People in search of maps of Southeast Asia will value this little book, which summarizes the cartographic holdings of 17 Singapore institutions. The majority of these are government institutions, and the holdings described are mostly twentieth-century. The guide entries indicate the size of each map collection, their geographical and chronological range, the types of maps they hold, and rules of access and reproduction. The list of collections is complemented by a twenty-page "Bibliographical essay of official publications relating to surveying and cartography in Singapore and Malaysia."

Directory of Canadian Map Collections, fifth edition/Lorraine Dubreuil. Ottawa: Association of Canadian Map Libraries, 1986. 163 p. ISBN 00705217 (Order from ACML Publications Officer, c/o National Map Collection, Canada Public Archives, 395 Wellington St., Ottawa, Ontario, K1A ON3, Canada, \$12.00 Can.)

Essential information about the services and holdings of 122 Canadian map libraries is provided by this useful bilingual guide, now in its fifth edition. For the first time in this edition, information on the status of automation and computer systems in the various libraries has been solicited. Details of the nature and size of holdings, special collections, library services, publications, and cataloguing are also provided. An appendix indexes the depositories of domestic and foreign map series.

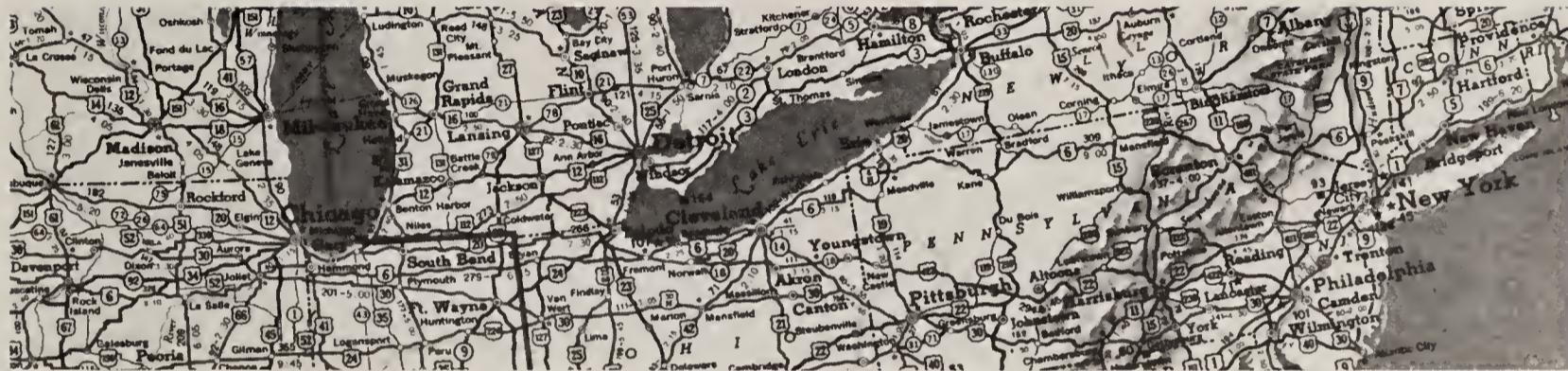
Map Librarianship: An Introduction, second edition/Mary Lynette Larsgaard. Littleton, Colorado: Libraries Unlimited, 1987. 382 p., illustrated. ISBN 0-87287-537-7 (Order from Libraries Unlimited, P.O. Box 263, Littleton, CO 80160-0263, \$43.50 in the U.S., \$52.50 elsewhere.)

This text, intended for use in the classrooms where the legions of young map librarians are trained, is a soup-to-nuts treatment of the subject densely packed with ideas and information that anyone interested in, or charged with, the care and development of a map library will use with profit. The second edition (The first edition was published in 1978) has been expanded in order to address problems generated by the rapid proliferation of new cartographic forms and technology, such as remote sensing imagery and automated mapping. The ample 60-page bibliography on map librarianship is supplemented by special bibliographies (totalling about 40 pages) intended to help construct a map reference collection.

Map Talk

I'd been poring over maps of the United States in Paterson for months, even reading books about the pioneers and savoring names like Platte and Cimarron and so on, and on the road-map was one long red line called Route 6 that led from the tip of Cape Cod clear to Ely, Nevada, and there dipped down to Los Angeles. I'll just stay on 6 all the way to Ely, I said to myself and confidently started.

Excerpted from *On the Road* by Jack Kerouac (1955)



Calendar

7 January 1989

The New York Map Society meets at the American Museum of Natural History, Room 319. Miklos Pinther, Chief Cartographer at the UN, will speak on the Everest '88 Expedition in which he participated. On **26 January** the Society will meet again at Turkish House, 1st Ave. & 46th St., where Thomas Goodrich will speak on 16th-century Ottoman maps. The topic for the meeting of **4 February** has not yet been announced. On **4 March**, the Society will tour "The Mapmaker's Art" an exhibit of British cartography at the Yale Center for British Art.

10 January 1989

The Washington Map Society is featuring this year a series of talks on Federal government mapping. This month, Jan Herman will speak on the Depot of Maps & Charts and lead a tour of the original Naval Observatory. On **7 February** Richard Richardson talks on the Post Office Department and James Golliver lectures on Maps on Stamps. The program for **7 March** features a talk on the Lake Survey and the History of Map Projections, the latter by John Snyder. Finally, on **5 April** Ralph Ehrenberg will discuss topographical engineers.

19 January 1989

The Chicago Map Society will meet at 5:30 P.M. in the Fellows' Lounge of the Newberry Library. Other meetings are scheduled for **16 February** and **16 March**. The general public and new members are welcome. For program and membership information write the Society at The Newberry Library, 60 W. Walton St., Chicago, IL 60610, or call Jim Akerman, 312/943-9090.

22 January 1989

The Map Society of the Delaware Valley will hold a show- and-tell meeting. Other scheduled meetings this year are **6 May** and **2 June**. For information, call Rich Boardman at 215/686-5397 or Chris Lane at 215/242-4750.

29 January-3 February 1989

The Australian Map Circle's Annual General Meeting convenes at Wollongong, New South Wales. Details of the conference may be obtained from Richard Miller, Cartographer, Department of Geography, Wollongong University, P. O. Box 1144, Wollongong, N.S.W. 2500 AUSTRALIA, telephone 042 270714.

19-22 March 1989

The Association of American Geographers (AAG) annual meeting will convene in Baltimore. For information write the AAG at 1710 Sixteenth Street, NW, Washington, DC 20009-3198.

10-15 June 1989

Geography and Map Division of the Special Libraries Association annual conference meets in New York (See *Briefly Noted*).

24-29 June 1989

The Map and Geography Round Table (MAGERT) of the American Library Association will hold its annual conference in Dallas, Texas. For information contact the Program Chair, Mary Anne Waltz, Geography and Map Librarian, Syracuse University, Syracuse, NY, 13244, telephone 315/423-4176 or 423-4158.

25 June-1 July 1989

The 13th International Conference on the History of Cartography takes place in Amsterdam, Leiden, and The Hague in The Netherlands. Direct inquiries to Marc Hameleers Faculty of Geographical Sciences, University of Utrecht, P.O. Box 80115, 3508 TC Utrecht, The Netherlands.

17-24 August 1989

Budapest, Hungary will be the site of the 14th International Cartographic Conference of the International Cartographic Association (ICA). Interested parties may write the Conference Secretary, Institute of Geodesy, Cartography and Remote Sensing, H-1373 Budapest, POB 546, Hungary.